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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/559,832 | 12/06/2005 | Fabrice Stassin | P70974US0 | 8193 |
| 136 7590 11/15/2007 JACOBSON HOLMAN PLLC 400 SEVENTH STREET N.W. SUITE 600 WASHINGTON, DC 20004 | | | EXAMINER WINKLER, MELISSA A | |
| | | | ART UNIT 1796 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,832

Applicant(s)

STASSIN ET AL.

Examiner

Melissa Winkler

Art Unit

4134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/10/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The oath or declaration is defective because: the declaration has not been signed by inventor Robert Jerome.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 provides for the use of a biodegradable polyester foam, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 11 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 4 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 1209189A1 to Wada et al. For convenience, citations for Wada et al. are from the English-language abstract and Japanese Patent Office Machine Translation of the document.

Regarding Claim 1. Wada et al. teach a process for modifying an inorganic compound, such as montmorillonite. In this process, montmorillonite is mixed with an aqueous solution of quaternary ammonium ions. Carbon dioxide under a pressure of 10 – 20 MPa is also introduced (English-language abstract “Solution,” Lines 1 - 6).

Regarding Claim 2. Wada et al. teach the process of Claim 1 wherein the carbon dioxide introduced is in a supercritical state (English-language abstract “Solution,” Lines 5 - 6).

Regarding Claim 3. Wada et al. teach the process of Claim 1 wherein montmorillonite and an organomodifier, specifically quaternary ammonium ions, are mixed before carbon dioxide under pressure is introduced (English-language abstract “Solution,” Lines 1 - 6).

Regarding Claim 4. Wada et al. teach the quaternary ammonium modifier used may be tetramethylammonium chloride, an alkylammonium salt (Machine Translated Detailed Description, Paragraph 16).

Regarding Claim 9. Wada et al. teach the process of Claim 1 wherein the carbon dioxide is at a pressure in the range of 10 – 20 MPa (100 – 200 bars) and a temperature in the range of 35 - 50°C (English-language abstract “Solution,” Lines 5 - 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1209189A1 to Wada et al. as applied to Claims 1 and 4 above, and further in view of US 2,761,835 to Brown. For convenience, citations for Wada et al. are from the English-language abstract and Japanese Patent Office Machine Translation of the document.

Regarding Claim 5. While Wada et al. teach the process of Claim 4 in which an alkylammonium salt is used, the claimed alkylammonium salts are not expressly taught. However, Brown also teaches a method of modifying montmorillonite with substituted ammonium ions from a salt such as tetraethylammonium chloride (Column 2, Lines 33 – 38; Column 3, Lines 58 – 61; Column 4, Lines 20 – 21, 35 – 36, and 52 – 53). Wada et al. and Brown are analogous art as they are from the same field of endeavor, namely processes for modifying montmorillonite and other similar compounds. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use tetraethylammonium chloride as the organomodifier in the process taught by Wada

et al. The motivation would have been that tetraethylammonium chloride provides advantages such as improved mechanical strength and increased resistance to chemical attack to the clays it modifies (Brown, Column 3, Lines 58 – 62).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1209189A1 to Wada et al. as applied to Claim 1, and further in view of US 2002/0018951 to Livengood et al. For convenience, citations for Wada et al. are from the English-language abstract and Japanese Patent Office Machine Translation of the document.

Regarding Claim 6. Wada et al. teach the process of Claim 1 wherein ammonium compounds are used as organomodifiers (Machine Translated Detailed Description, Paragraph 16). Wada et al. do not expressly teach the ammonium compounds used are siliconated ammonium compounds. However, Livengood et al. also teach a composition in which the organomodifier used is an amino-terminated poly(dimethylsiloxane) (Page 5, Paragraph 55 and Page 11, Paragraph 104). Wada et al. and Livengood et al. are of the same technical difficulty, namely organic ammonium charge modifiers. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the amine-terminated poly(dimethylsiloxane) polymer taught by Livengood et al. as the modifier in the process taught by Wada et al. The motivation would have been that the modified poly(dimethylsiloxane) polymer taught

by Livengood et al. can be used as a compatibilizing agent, facilitating the miscibility of polymers so that desired properties in the final product, such as thermal stability, are achieved.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1209189A1 to Wada et al. as applied to Claim 1 above, and further in view of US 5,069,994 to Gitzel et al. For convenience, citations for Wada et al. are from the English-language abstract and Japanese Patent Office Machine Translation of the document.

Regarding Claim 7. Wada et al. teach the process of Claim 1 wherein ammonium compounds are used as organomodifiers (Machine Translated Detailed Description, Paragraph 16). Wada et al. do not expressly teach the ammonium compounds used are highly fluorinated ammonium compounds. However, Gitzel et al. do teach the use of an intensely fluorinated ammonium compound as a charge modifier (Column 4, Line 36 – Column 5, Line 12). Though Gitzel et al. do not expressly disclose the claimed highly fluorinated ammonium compound, Gitzel et al. do teach a variety of highly fluorinated compounds. One would consequently expect that one or more of these highly fluorinated compounds would function as an organomodifier in substantially the same way as the claimed fluorinated compound. Wada et al. and Gitzel et al. are of the same technical difficulty, namely organic ammonium charge

modifiers. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a highly fluorinated ammonium compound as the organomodifier in the process taught by Wada et al. The motivation would have been that using a highly fluorinated ammonium compound as the organomodifier of the clay would provide advantages such as their ability to act as a positive or negative charge control agent so that the clay could suitably modified for mixing with assorted polymers (Gitzel et al., Column 3, Line 65 – Column 4, Line 12) .

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1209189A1 to Wada et al. as applied to Claim 1 above, and further in view of US 5,728,764 to Bauer et al. For convenience, citations for Wada et al. are from the English-language abstract and Japanese Patent Office Machine Translation of the document.

Regarding Claim 8. Wada et al. teach the process of Claim 1 wherein quaternary ammonium salts are used (Machine Translated Detailed Description, Paragraph 16). Wada et al. do not expressly the precursors of the ammonium compound are an amine and alkyl halide. However, Bauer et al. also teach a process for modifying clay in which the quaternary ammonium modifier may be derived from an amine and methyl chloride (Column 3, Lines 57 – 64). Wada et al. and Bauer et al. are analogous art as they are from the same field of endeavor, namely processes for modifying clay using

quaternary ammonium compounds as organomodifiers. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the ammonium compound taught by Bauer et al. as the quaternary ammonium organomodifier in the process taught by Wada et al. The motivation would have been that the quaternary ammonium compounds taught by Bauer et al. can be used to modify clay such that a desired degree of hydrophobicity in the clay is attained (Bauer et al., Column 4, Lines 26 – 29).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1209189A1 to Wada et al. as applied to Claim 1 above, and further in view of US 5,654,347 to Khemani et al. For convenience, citations for Wada et al. are from the English-language abstract and Japanese Patent Office Machine Translation of the document.

Regarding Claim 10. Wada et al. teach the process of Claim 1 but do not expressly teach the modified clay produced is incorporated into a polyester foam with a regular, fine, and closed cell structure. However, Khemani et al. teach a polyester foam whose properties may be modified with the addition of clay (Column 4, Lines 30 – 33). Polyesters contain potentially hydrolysable ester bonds that give them biodegradability. The final polyester foam product has a well formed cell structure where all cells are

closed cells with a diameter between 200 – 400 μm (Column 7, Line 60 – Column 8, Line 3). Wada et al. and Khemani et al. are analogous art as they are from the same field of endeavor, namely compositions containing clay. At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the modified clay taught by Wada et al. into a polyester foam with the cell structure taught by Khemani et al. The motivation would have been that the incorporation of clay into foam would enhance the properties, such as thermal stability and mechanical strength, in the final foam product and that modified clay has enhanced miscibility with polymers compared to unmodified clays.

Regarding Claim 11. Wada et al. teach the polyester foam of Claim 10.

Regarding the claimed uses for the polyester foam, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

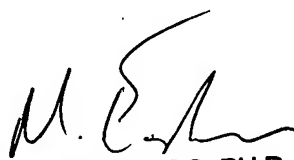
Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Winkler whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MW *mw*
November 13, 2007


MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER
13/Nov/07